

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

I. STATUS OF THE CLAIMS

Claims 1, 11, 20, 29, 42, 46, and 47 are amended herein.

In view of the above, it is respectfully submitted that claims 1-49 are currently pending and under consideration.

II. REJECTION OF CLAIMS 1-49 UNDER 35 U.S.C. § 103(A) AS BEING UNPATENTABLE OVER YOSHIMURA (US 5,793,917) IN VIEW OF SUZUKI ET AL. (US 5,629,795) AND BHAGAVATULA ET AL. (US 5,887,105)

Claim 1 (as amended herein) of the present invention relates to “[a] method for repairing a transmission line having a section which comprises a first fiber having a positive dispersion with respect to wavelength transmitted through the section in the first half of the transmission line and a second fiber having a negative dispersion with respect to wavelength transmitted through the section in the second half of the transmission line, the method comprising: inserting a third fiber in the section, wherein the third fiber has an absolute value of dispersion per unit of length smaller than an absolute value of dispersion per unit of length of the first and the second fibers.”

The Examiner maintains the rejection of claims 1-49 under 35 U.S.C. § 103(a) based on Yoshimura (US 5,793,917) in view of Suzuki et al. (US 5,629,795) and Bhagavatula et al. (US 5,887,105).

Particularly, as indicated in item 2 on page 2 of the Office Action, the Examiner asserts, “[o]nce negative dispersion is introduced in the fiber....offsetting the positive accumulated dispersion, the act of adding yet another third length of fiber where the dispersion is less than the absolute value of dispersion per unit length is obvious to one of ordinary skill. By the same logic, one could patent adding a fourth, fifth, etc. length of fiber so long as it does not change the per unit dispersion. Simply adding a zero dispersion unit of fiber, which is common at certain wavelengths, would meet the requirement.”

In contrast to the Examiner’s assertions, Applicants maintain that claims 1-49 do not read on the combination of Yoshimura, Suzuki, and Bhagavatula.

As mentioned in the Amendment filed October 19, 2005, Yoshimura is directed to compensating a dispersion occurring in a submarine optical fiber transmission system for repairing an optical fiber cable and dispersion compensating cables. Col. 2, lines 1-10 of Yoshimura discusses inserting dispersion compensating fiber cables at predetermined intervals (500 to 1000 km) of an optical fiber. The dispersion compensating fiber cables (106a-106m in FIG. 17) include a single-mode fiber having a dispersion coefficient whose sign is opposite to the sign of the dispersion coefficient of the optical fiber cable (103) at the transmitted wavelength and is uniform in the longitudinal direction of the dispersion compensating fiber cable (see, col. 2, lines 12-20).

Bhagavatula uses a pair of fibers with positive and negative dispersion and makes total dispersion nearly zero without making four wave mixing (see, col. 3, lines 27-34). This is similar to the problem discussed at col. 1, lines 49-52 of Bhagavatula, where "the random lengths and dispersions which might be needed for replacement cables." Therefore, making a repair at col. 6, lines 45-50 of Bhagavatula merely means that the shorter the sub-length (i.e., length of the pair cables), the easier the replacement or repair cables may be for the insertion without effecting the total dispersion. Thus, repair or replacement according to Bhagavatula is done by a pair of cables with positive and negative dispersion.

According to Suzuki, it is submitted that the "transmission line" is a line having a positive dispersion fiber in the first half and a negative dispersion fiber in the second half. Dispersion medium in Suzuki does not correspond to "a second fiber having a negative dispersion" because the dispersion medium does not occupy the second half of the transmission line.

Independent claims 1, 11, 20, 29, 42, 46 and 47 describe that a first fiber has a positive dispersion with respect to wavelength transmitted through the section in the first half of the transmission line and that a second fiber has a negative dispersion with respect to wavelength transmitted through the section in the second half of the transmission line. This feature is neither disclosed nor suggested by Bhagavatula, Yoshimura, and Suzuki.

Further, independent claims 1, 11 and 20 recite a method of repairing a transmission line including "inserting a third fiber in the section", where "the third fiber has an absolute value of dispersion per unit of length smaller than an absolute value of dispersion per unit of length of the first and the second fibers." Claims 29, 46 and 47 recite somewhat similar features.

Independent claim 42 also recites, "a respective section of the plurality of sections... being formed of an optical fiber having an absolute value of dispersion per unit of length smaller than the absolute value of dispersion per unit of length of the first and the second fibers".

Further, the respective section includes at least one of "a device for inserting light into the section", "a gain equalizer" and "a dispersion compensator".

Accordingly, Bhagavatula, Yoshimura, and Suzuki, either alone or in combination, do not teach or suggest the features recited in independent claims 1, 11, 20, 29, 42, 46 and 47.

For at least the above-mentioned reasons, claims depending from independent claims are patentably distinguishable over Bhagavatula, Yoshimura, and Suzuki. The dependent claims are also independently patentable. For example, as recited in claim 43, "the optical fiber forming said respective section of the plurality of sections, which is not a section of said at least some sections, is non-zero dispersion shifted fiber (NZ-DSF)." The cited references do not teach or suggest these features of claim 43.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. CONCLUSION

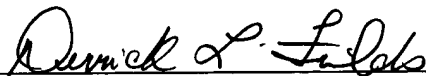
In view of the foregoing amendments and remarks, it is respectfully submitted that each of the claims patentably distinguishes over the prior art, and therefore defines allowable subject matter. A prompt and favorable reconsideration of the rejection along with an indication of allowability of all pending claims are therefore respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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